

### **Remarks**

Claims 15, 55, 56, and 58-62 are pending in the application. Claim 57 has been canceled. Claims 15 and 58-61 have been amended.

Claim 59 was amended to correct typographic errors introduced when the claim was presented in the Supplemental Amendment dated October 4, 2004. The amendments to claim 59 restore the claim to how it was presented in the Amendment and Response dated July 27, 2004. The compound shown at the bottom of Figure 9 in the application provides support for the amendment to claim 59.

Claim 57 was canceled because it was redundant in light of the amendment to claim 15. Because claim 57 was canceled, claim 60 was amended so that it is no longer dependent on claim 57.

Claim 58 was amended to remove the limitation that “R<sub>1</sub> is CO<sub>2</sub>R<sub>4</sub>” because the definition of R<sub>1</sub> was redundant in light of the amendment to claim 15.

Claim 61 was amended to include piperidine ZHN-92 shown in Figure 10.

Importantly, support for the claim amendments can be found throughout the application. Therefore, no new matter has been added. Moreover, the claim amendments and cancellations should not be construed to be an acquiescence to any of the claim rejections. Rather, the cancellations and amendments to the claims are being made solely to expedite the prosecution of the above-identified application. The Applicants expressly reserve the right to further prosecute the same or similar claims in subsequent patent applications claiming the benefit of priority to the instant application. 35 USC § 120.

### **Rejections Under 35 USC § 112¶1**

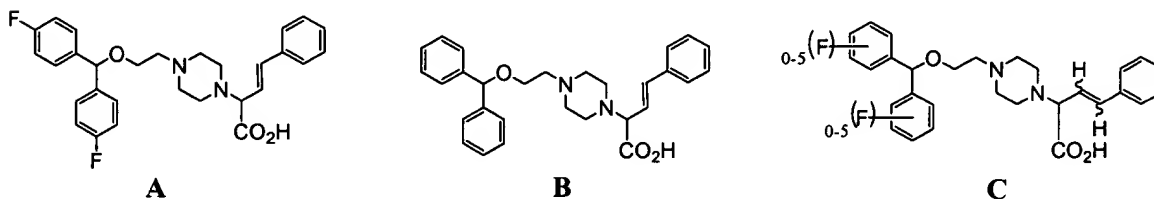
Claims 15 and 55-60 stand rejected under 35 USC 112¶1, based on the Examiner’s contention that “the specification as originally filed does not provide support for the invention as now claimed.” Given the lengthy prosecution of this case, a brief summary of the Examiner’s contentions regarding the necessary disclosure required to support the generic formula of claim 15 is described in Section A below. Applicant’s response to the Examiner’s contentions are presented in Section B below.

*A. Brief Summary of Examiner's Comments Regarding Applicant's Disclosure in Support of Claim 15.*

In the communication dated December 29, 2004, the Examiner maintains that the "two specific structures that would read on the presently claimed generic [formula]...is deemed to be insufficient support for the newly recited generic [structure]." Regarding variable  $R_1$ , the Examiner contends that there is only support for  $R_1 = \text{CO}_2\text{H}$ . Regarding variables  $R_2$ , and  $R_3$ , the Examiner states the fluorine and hydrogen atoms of the phenyl group in GBR 12935 do not supply support for the limitation that  $R_2$  and  $R_3$  can be H, F, Cl, Br or I.

In the communication dated June 3, 2004, the Examiner contends that since "no 'F' substituents are found at the ortho and meta positions of the phenyl rings [of the two compounds presented at the bottom of Figure 9]...there is no 'F' substituent to provide support for the other halogens" in the definition of  $R_3$ ; where  $R_3$  is H, F, Cl, Br, or I. In the same communication, the Examiner also contends that disclosure of a fluoro group at the para position of the phenyl ring is not sufficient support for Cl, Br, or I in the definition of  $R_2$ , where  $R_2$  is H, F, Cl, Br, or I. The Examiner cites *In re Grimme, Keil, and Schmitz* 124 USPQ 499 (CCPA 1960) in support of his contention that disclosure of F does not support a claim encompassing F, Cl, Br, or I.

In sum, it follows that the Examiner appears to contend that disclosure of compounds **A** and **B** would only provide support for compound **C**. The Examiner appears to rely on *In re Grimme, Keil, and Schmitz* 124 USPQ 499 (CCPA 1960), *In re Lukach*, 442 F.2d 967, 169 USPQ 795 (CCPA (1971)), and *In re Smith*, 458 F.2d 1389, 1395, 173 USPQ 679, 683 (CCPA 1972) as the basis for concluding that disclosure of **A** and **B** only provides written support for compound **C**.



**B. Applicant's Response to Examiner's Contentions Regarding the Sufficiency of Disclosure for Claim 15**

In order to expedite prosecution, the Applicants have amended claim 15 to remove “-CON(R<sub>4</sub>)<sub>2</sub>” from the definition of R<sub>1</sub>. In addition, the Applicants have replaced the R<sub>4</sub> groups attached to the C-C double bond with hydrogen atoms. Support for the fact that R<sub>4</sub> can be hydrogen can be found in the bottom two compounds presented in figure 9 which have hydrogen atoms attached to the C-C double bond.

Applicants remind the Examiner that, when evaluating whether there is sufficient written support for an amended claim, the MPEP mandates that “the fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, the applicant was in *possession of the invention* as now claimed.” MPEP § 2163; *see Vas-Cath, Inc.*, 935 F.2d at 1563-64, 19 USPQ2d at 1117. Regarding the quantum of written description necessary to support a generic claim, MPEP § 2163.05 states that “the written description requirement for a claimed genus may be satisfied through sufficient description of a *representative* number of species.” In fact, description of just one species can be sufficient to support a claim to a genus so long as the species is representative of the genus. *See Enzo Biochem*, 323 F.3d 956, 966; and MPEP § 2163.05. Disclosed species may be considered representative of the genus when 1) the species adequately reflect structural variation of the genus, and 2) there is no evidence indicating ordinary artisans would be unable to “predict the operability in the invention of any species other than the one disclosed.” *See* § 2163.05; and *In re Curtis*, 354 F.3d 1347, 1358, 69 USPQ2d 1274, 1282 (Fed. Cir. 2004).

Importantly, the MPEP and the binding case law described above establish that the description of a *single species* may be sufficient support for a claim to genus. Therefore, the Applicants contend that the Examiner may not rely on *In re Grimme, Keil, and Schmitz* 124 USPQ 499 (1960) in support of the contention that the description of a single compound is never sufficient to support a claim to a genus, regardless of the size of the genus. Such a reading of *Grimme* directly conflicts with both the recent Federal Circuit precedent providing that “the disclosure of only one species encompassed within a

genus adequately describes a claim directed to that genus only if the disclosure ‘indicates that the patentee has invented species sufficient to constitute the gen[us].’ See *Enzo Biochem*, 323 F.3d 956, 966. Applicants also direct the Examiner to MPEP § 2163.05 which states “there may be situations where one species adequately supports a genus. See, e.g., *In re Rasmussen*, 650 F.2d 1212, 1214.” The Applicants point out that, although *In re Rasmussen* does not deal specifically with chemical compositions, the principle that description of one species may adequately support a genus followed by the court in *In re Rasmussen* applies to the instant case.

Regarding the Examiner’s reliance on *In re Lukach* and *In re Smith* in the communication dated September 7, 2004, the Applicants respectfully remind the Examiner that the facts relating to the courts’ opinions are substantially different from those presented in the instant application. *In re Lukach* pertained to whether adequate support existed for a specific numeric molecular weight limitation. *In re Lukach* 58 C.C.P.A. 1233, 442 F.2d 967. *In re Smith* pertained to, *inter alia*, whether adequate support existed for the limitation that a group containing “at least 8 carbon atoms” when the only support was the disclosure of compounds containing “at least 12 carbon atoms.” *In re Smith* 458 F.2d 1389, 1396. In fact, the court in *Smith* forewarns that its ruling may not be arbitrarily applied to another set of facts, but rather “[p]recisely how close the description must come to comply with § 112 must be left to case-by-case development. *Id.* at 1395. This rule is reiterated at MPEP § 2163.05 which states that “each case must be decided on its own facts in terms of what is reasonably communicated to those skilled in the art.” See also *In re Wilder*, 736 F.2d 1516, 1520.

In light of the binding precedent and the teachings of the MPEP regarding the written description requirement, the Applicants respectfully contend that disclosure of compounds **A** and **B** is sufficient to establish that the Applicants were in *possession of the invention* described in amended claim 15. The Applicants respectfully assert that disclosure of fluorophenyl adequately reflects the structural variation of the genus consisting of phenyl and halophenyl. Furthermore, the Applicants contend synthesizing and describing the *fluorophenyl* compound is sufficient to establish that Applicants were in possession of *halophenyl* because a fluoro substituent is recognized as a halogen,

which group also includes Cl, Br, and I. Consequently, one of ordinary skill in the art would be *in possession* of a phenyl group substituted with a chloride, bromide, or iodide upon synthesizing and describing fluorophenyl given that halogens are a four-membered, widely recognized group. In addition, there is no evidence that the compounds of the invention would be operable only with fluorophenyl. In fact, the compounds of the invention are strong inhibitors of multiple receptors, and there is no reason for one of skill in the art to infer that the counterpart chlorophenyl, bromophenyl, or iodophenyl compounds would be inoperable.

Regarding variable R<sub>1</sub>, currently defined as CO<sub>2</sub>R<sub>4</sub>, wherein R<sub>4</sub> is H or alkyl, the Examiner maintains that CO<sub>2</sub>(alkyl) is not supported by CO<sub>2</sub>H because hydrogen and alkyl are not bioisosteres. The Applicants respectfully remind the Examiner, as described above, that the test for satisfying the written description requirement does not turn on whether a substituent is a bioisostere; rather, the test is whether the specification *conveys with reasonable clarity to those skilled in the art that the applicant was in possession of the invention*. The Applicants contend that carboxylic acid is adequate to “reflect the [structural] variation within the genus” encompassing only carboxylic acid and its alkyl esters given the structural similarity of the two functional groups. See MPEP § 2163.05. Moreover, the Applicants specifically state in the second to last paragraph on page 12 of the application that a carboxylic acid can be converted to an ester. Thus, the Applicants contend that synthesizing and describing the carboxylic acid in combination with stating that the carboxylic acid may be converted to an ester conveys with *reasonable clarity* that the Applicants were also in possession of alkyl ester.

Accordingly, the Applicants respectfully request the withdrawal of the rejections of claims 15 and 55, 56, and 58-60 under 35 USC § 112¶1.

#### **Rejections Under 35 USC 102(b)**

Claims 61-62 were rejected under 35 USC § 102(b), based on the Examiner’s contention that they are unpatentable over Dutta et al., *J. Med. Chem.* **1998**, *41*, 699, disclosing GBR 12909. In response, the Applicants have amended claim 61 to remove the propylphenylpiperazine compound. Accordingly, the Applicants respectfully request

the withdrawal of the rejections of claims 61-62 under 35 USC § 102(b) based on Dutta et al.

**Fees**

The Applicants believe that no fees are due in connection with the filing of this Response. Nevertheless, the Commissioner is hereby authorized to charge any fees due in connection with the filing of this Response to our Deposit Account, No. 06-1448.

**Conclusion**

In view of the above amendments and remarks, it is believed that the pending claims are in condition for allowance. Therefore, the Applicants respectfully request reconsideration and withdrawal of the pending rejections. If a telephone conversation with Applicants' Attorney would expedite prosecution of the above-identified application, the Examiner is urged to contact the undersigned.

Respectfully submitted,  
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